An anthropological look at malaria

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A medical anthropologist pursuing her doctorate at the Université du Québec à Montréal went to Guinea to study malaria from an ecological perspective.

The idea of attempting to quantify the ravages that malaria causes on a worldwide basis is as daunting as trying to calculate the number of kilometers that light travels in an hour. Imagine: the International Development Research Centre (IDRC) estimates that there are currently some 500 million cases of malaria in 95 countries around the world. Africa alone accounts for 100 million of these cases, and suffers one million deaths every year.

Parasitic disease

Malaria is a parasitic disease carried by the anopheles mosquito, which transmits the parasite to humans through its bite. Mankind has tried everything to be rid of this scourge: mass spraying with insecticides, chemoprophylaxis, and placing mosquito netting around beds to protect people from being bitten at night when mosquitoes are most active.

Yet despite all these efforts, malaria is still predominant in countries like Guinea. In the Tulani language, it is known as the "week-long disease." According to the 1996 statistical year book, malaria has been the leading cause of visits to the country's medical facilities since 1994. Moreover, resistance to chloroquine, the principal drug treatment for malaria, is rising. "In short, we may say that the malaria problem in Guinea today is getting worse," says Natalie Pinsonnault, an environmental sciences doctoral candidate at the University of Quebec at Montreal.

Ecological approach

This young woman, a 30 year-old medical anthropologist, has just come back from an eight-month stay in Guinea. She received a doctoral fellowship from IDRC to examine in-depth a new approach to understanding the disease: an ecological approach that takes into account the multiple relationships — geographic, social, political, historical, religious — in any given environment, and the characteristics of infection as they vary from one region to another.

"Malaria is a classic example of an environmental disease," says the researcher. "We know very well how it is contracted, but we cannot yet explain all the elements that precipitate or retard infection, and that vary so widely from one setting to the next. If we look closely at the conditions in which the disease flourishes, we may be able to find more appropriate ways of combating it, perhaps even on a regional level."

Different effects

A good example here is the difference in the effect that malaria has in arid regions and in humid ecosystems. The latter typically have permanent pools of stagnant water that offer ideal nurseries for mosquito larvae. "In humid settings, the insect is there all the time, and people are bitten from the day they are born. Over the long term, this tends to diminish the symptoms of malaria (fever,

etc.). In dry zones, on the other hand, the insect is really only present during the rainy season, for five or six months of the year." The result is that people are bitten less frequently, but in turn their system reacts more sharply, and the consequences are much more serious, leading to coma and even to death. This is why, as Pinsonnault says, we need to take a more targeted approach to combating the disease, rather than conducting vast, homogeneous eradication programs.

It is this regional approach to the problem that forms the backdrop to all the research this scientist has been conducting. Working in the field since May 1997, she initially had the help of a specialist, thanks to the National Anti-Malaria Program (PNLP), and with his assistance she selected a village in the arid zone (Madina) and another in the humid zone (Tougiwell).

Research methods

The Environmental Research Center at the University of Conakry (where she set up her working headquarters) provided a guide and interpreter, Mr Alhassane Dombouya, who helped her establish contact with the villagers. She conducted dozens of interviews, with malaria sufferers, of course, but also with the various authorities (health workers, village chiefs, former politicians, storytellers) who helped her establish a truly ecological (multidimensional) vision of the malaria problem.

Interviews with market gardeners, coupled with field visits, allowed her to determine the extent to which highly specific subsistence activities could influence the risk of infections. "In Tougiwell as well as in Madina, because the sub-Saharan soil is so dry, rice paddies and truck gardens are often set up on the edge of the village, where stagnant water accumulates after a rainfall," she explains. "Thus farmers find themselves working in close contact with areas that are ideal breeding grounds for mosquitoes."

Village culture

By immersing herself in the villagers' culture (which determines their reactions and their attitudes not only to disease, but to reality in general), Pinsonnault was able to gain access to an immense universe where the environment, communal history, and health are intimately linked. In fact, the two villages on which this research was based are located in the region of Foutah (Middle Guinea today) where most of the Tulanis live in a very hierarchical society. On the one hand, in Madina, the inhabitants are referred to as "noble Tulanis," while in Tougiwell they are "descendants of slaves." In Foutah, life revolves around Islam, the dominant religion, which is also the religion of the Tulanis. It was the Tulanis who conquered this territory in the midst of a holy war. They then took prisoners, whom they settled in various districts while assimilating them.

It was these differing social levels that determined where people would live, and they are thus significant in terms of malaria: the noble Tulanis established themselves in dry, mountainous areas, while the "descendants of slaves" settled in the humid lowlands, right where stagnant pools and malaria mosquitoes are most abundant.

Social geography

"This social geography today plays a crucial role in the approach of these two villages to the malaria problem," the medical anthropologist explains. Many residents of the low-lying Tougiwell area, who have been bitten since birth, are chronic carriers of malaria, but they do not believe that they are infected. They say that malaria is a disease of the noble Tulanis, assuming that it is to be found where the symptoms are most evident: in the dry areas, where people are less resistent. The result is that, in Tougiwell, people may complain of the nuisance but they do little to protect

themselves. Yet it must also be noted that poverty is much more severe in Tougiwell than in Madina, and there is much less access to modern methods of treatment and prevention.

This is what Pinsonnault learned during her eight months in Guinea. She came back with a vast array of interviews, impressions, observations, and videos that bespeak a complex reality. She also has memories of some difficulties that served to strengthen her anthropological approach. She was surprised, for example (although she was well aware of the logistical and communication problems inherent in African travel), to find that the people who were supposed to accompany her in the field "were not ready to put up with these inconveniences." Why not? "As a research student, I was not able to offer the same scale of salaries and services that they were used to receiving from international organizations."

Research obstacles

There were also some difficulties inherent in her status as a woman married to a Guinean man: "in one of the two villages, this made things easier, while in the other it was exactly the reverse. Some key local officials looked quite askance at my situation."

The challenge awaiting her now in Quebec is to sift through and analyze all the information she has gathered. Because she is interested in all these dimensions — the biophysical characteristics of the setting (humid or arid), history, social politics and farming habits — Pinsonnault is aware that she is helping to cast the disease in a new light. But this will not be news to the main players in the situation, the Guineans: "The Guineans have at hand all the elements of a solution to malaria,"she stresses. From the many interviews she conducted, it is clear what links must be established to understand this disease more closely and to formulate more appropriate responses to malaria in their immediate surroundings. "My role is to bring this all together, to focus the light so that we can derive better tools from all these elements for fighting malaria. If I can do this, I will have helped to lay the foundation for an ecological perspective in studying problems where health and the environment are intertwined."

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